

Before the
Federal Communications Commission
Washington, D.C. 20554

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In the Matter of)

Price Cap Performance Review)
for Local Exchange Carriers)

Access Charge Reform)

CC Docket No. 94-1

CC Docket No. 96-262

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SUMMARY

AT&T, as part of the Coalition for Affordable Local and Long Distance Services (“CALLS”), has proposed a set of reforms that the Commission should adopt and which would obviate the need for most of the proposals in the *Further Notice*. If the Commission does not adopt the CALLS plan, however, or if it adopts it only for those LECs that have voluntarily agreed to its terms, this proceeding gives the Commission an ideal opportunity to respond persuasively to the D.C. Circuit’s remand decision in *USTA v. FCC* and to correct serious deficiencies that are inherent in the Commission’s current price cap regulatory system.

One of those, as recognized in the *Further Notice*, is the erroneous assumption that the enormous excess profits historically earned by the local exchange carriers (“LECs”) represent a legitimate part of the LECs’ required cost of capital. Another serious deficiency, also noted but not corrected in the *Further Notice*, is the Commission’s practice of calculating adjustments to the price cap system on the basis of the LECs’ total-company costs and revenues, rather than their interstate costs and revenues. AT&T’s comments demonstrate that the Commission can and should correct both of these deficiencies in this proceeding, even as the Commission responds to the specific issues raised by the Court in the *USTA* decision.

As the Commission is well aware, the price cap system is designed to stimulate, to the extent possible, the efficiency incentives of competitive markets. To do so, the system caps the LECs’ access rates, and the caps are adjusted each year by a measure of inflation minus a productivity offset, or “X-factor.” The X-factor represents the amount by which the LECs, in the provision of their interstate access services, can be expected to outperform economy-wide productivity gains. The X-factor currently has two parts: a “historical” component based on the LECs’ *prior* productivity growth, and an additional consumer productivity dividend (“CPD”). The latter component reflects an expectation that, because of efficiencies created by the price cap

regulatory scheme, LEC productivity would grow faster in the future than it had in the past. Prior to 1997, the price cap system also contained a mechanism under which, if a LEC's interstate rate of return exceeded a certain threshold, the LEC was required to make a one-time reduction in its rates the following year as a way of "sharing" those unanticipated productivity gains with consumers. In the 1997 order that was the subject of the *USTA* appeal, the Commission eliminated the sharing requirement, prescribed a new historical component of the X-factor of 6.0 percent, and retained the existing CPD of 0.5 percent.

The D.C. Circuit's decision remanding that order rejected most of the LECs' challenges and, indeed, left the Commission wide discretion to make the price cap system even more effective at replicating the incentives of a competitive market. As to the historical component of the X-factor, the court merely held that "[t]he Commission ha[d] failed to state a coherent theory supporting its choice of 6.0%" because of the way the Commission had analyzed the data on the LECs' average productivity. *USTA v. FCC*, 188 F.3d 521, 526 (D.C. Cir. 1999). The Court also found that the Commission had not provided a sufficient explanation for its decision to retain the 0.5 percent CPD, although the Court expressly acknowledged "that it is defensible to include a CPD corresponding to whatever productivity increase may be expected from the elimination of sharing." *Id.* at 527. Accordingly, the Court remanded the case to the FCC "for further explanation." *Id.* at 526.

In response to the D.C. Circuit's decision, the Commission's *Further Notice* requests comment on three principal issues pertaining to the X-factor used in the Commission's price-cap regulation of local exchange carriers. First, how should the historical component of the X-factor be determined, both for the 1997-2000 remand period and in the future? Second, at what level should the CPD be set? And third, how should the Commission correct for prior years when the X-factor was too low?

Historical Component. As to the first issue: of the three options described in the *Further Notice*, the Commission's "Option 2" is the best method for estimating the historical component of the X-factor. This method, based on calculations of the LECs' total factor productivity ("TFP"), corrects Option 1's erroneous calculation of capital inputs and the related, erroneous assumption that a LECs' excess earnings represent a legitimate cost of capital.

With little difficulty, Option 2 also can be modified to correct the other major deficiency that has infected prior estimates of the historical component of the X-factor: the Commission's reliance on total company data rather than interstate data. Because the price cap system regulates only *interstate* rates, it only makes sense, as a matter of law and policy, to base the X-factor on the LECs' *interstate* costs and revenues. The Commission has recognized this principle for years, but has been reluctant to follow it because of technical problems in the calculation of the relevant interstate inputs. AT&T has now found a compelling way to surmount these technical problems, and thereby allow the Commission, using Option 2, to compute a historical X-factor for the LECs' interstate services. The more indirect approach embodied in Option 3 simply confirms what the industry has known all along, namely, that historical X-factors based on total-company data seriously understate the LECs' true productivity in the provision of interstate services.

The Commission, therefore, should use the modified Option 2 methodology to calculate the X-factor for the remand period -- *i.e.*, 1997-2000 -- and the period from July 1, 2000 forward. Specifically, with respect to the remand period, the D.C. Circuit's objections can best be met by using the "rolling average" methodology used in the 1997 order, but without giving preference to any particular averages. The Commission has ample discretion to adopt this methodology for the remand period, and, when applied to the data from 1986-1995, it yields an X-factor of 10.1 percent.

With respect to the period from July 1, 2000 forward, the Commission should use the modified Option 2 methodology, but should add the 1996-98 data to each of the rolling averages. The addition of these data is appropriate because it continues to give greater weight to data from the more recent years governed by price caps. Application of this methodology yields an X-factor of 9.5 percent for the period from July 1, 2000 forward.

Consumer Productivity Dividend. To make the price cap system replicate more fully the incentives of a competitive market, the Commission should also adopt a CPD of at least 1.1 percent. As the D.C. Circuit observed, the LECs did not dispute the Commission's rationale for retaining a CPD in some amount, namely, that the newly adopted rule eliminating sharing requirements would further increase the price cap LECs' productivity. Because there is no dispute about the Commission's reason for retaining the CPD, the only question on remand is the level at which the CPD should be set to reflect the likely impact of eliminating sharing. To answer that question, the Commission must determine a reasonable estimate of the difference between the LECs' potential productivity gains in a sharing regime and the LECs' potential productivity gains in a non-sharing regime.

There are several reasonable approaches to calculating this difference, and all of them point toward a CPD of at least 1.1 percent. The most straightforward approach is to rely on the model developed by Strategic Policy Research and alluded to in the *Further Notice*. That model predicts that the elimination of sharing from the existing price-cap system would increase the LECs' productivity by approximately three times the productivity increase that was created by the adoption of the original price cap system.

Reasonable measures of the latter productivity increase range from the 0.5 percent predicted by the Commission itself in 1990 to approximately 0.66 percent, when the LECs' productivity is analyzed on an interstate-only basis. Combined with the SPR model, this analysis

thus suggests that the LECs' can eventually expect a productivity increase of 1.5 to 2.0 percent as a result of the Commission's decision to eliminate sharing. Taking the lowest of these numbers, and reducing it by 0.4 percent to reflect the fact that some portion of this productivity increase may already be reflected in the historical X-factors from 1996-1998 (when the LECs were given the option of eliminating sharing on their own), yields a very conservative CPD of 1.1 percent.

Correction for Prior Inaccuracies in the X-factor. Finally, the Commission should reinitialize the price caps to correct for prior years when the X-factor was set too low. The CPD has never been used solely to correct past mistakes, and it should not be used for that purpose now. The Commission, however, *should* correct for prior years by reinitializing the price caps to where they would have been if the historical component of the X-factor had been set at 10.1 percent during the period 1995-2000, with a CPD of 1.1 percent during 1997-2000. As the Commission has previously recognized, errors in the estimation of the X-factor are not self-correcting, but continue to infect the price cap system and may cause increasingly erroneous prices over time. Accordingly, the Commission should reinitialize the price caps to give consumers relief that is as complete as possible given the prohibition on retroactive rulemaking.

Collectively, these measures will go a long way to making the price cap system replicate the efficiency incentives of a competitive market. The Commission should adopt them as soon as possible.

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COMMENTS OF AT&T CORP.

Pursuant to section 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, AT&T Corp. ("AT&T") respectfully submits these comments in response to the Commission's Further Notice of Proposed Rulemaking, FCC 99-345, released November 15, 1999 ("*Further Notice*"). That notice requests comment on how the "X-factor" that the Commission uses in regulating the LECs' interstate access rates should be re-prescribed for July 1, 1997 to June 30, 2000, and prescribed prospectively for July 1, 2000 forward, in light of the decision of the United States Court of Appeals for the District of Columbia Circuit in *USTA v. FCC*.¹

AT&T, along with Bell Atlantic, BellSouth, GTE, SBC, and Sprint, are part of the Coalition for Affordable Local and Long Distance Services ("CALLS") and have recently proposed a set of reforms that would obviate the need for the prospective rate adjustments proposed in the *Further Notice* for the LECs who are CALLS members. The CALLS Plan is a compromise plan, and therefore AT&T's positions in these comments differ from those of CALLS.

¹ *USTA v. FCC*, 188 F.3d 521 (D.C. Cir. 1999).

Because of its numerous public interest benefits, AT&T strongly supports the CALLS proposal and urges the Commission to adopt it for *all* price cap LECs. If the Commission does so, the CALLS Plan would resolve, in an equitable and sustainable manner, virtually all of the issues raised in the *Further Notice*. If the Commission adopts the CALLS proposal only for those LECs that have voluntarily agreed to it, then AT&T's positions in these comments would apply to the remaining price cap LECs, including but not limited to Ameritech and U S WEST, that are not members of CALLS. Although the Commission should adopt the CALLS Plan to rationalize the access and universal service regimes, if for any reason the Commission does not adopt the CALLS Plan, AT&T's positions here would apply to all price cap LECs.

INTRODUCTION AND SUMMARY

In 1990, the Commission developed an incentive-based price cap system to regulate the rates that certain incumbent local exchange carriers ("LECs") can charge for interstate access services.² The plan was designed to eliminate the perverse economic incentives created by rate-of-return regulation, and to simulate, to the extent possible, the efficiency incentives found in competitive markets.³ To achieve those goals, the price cap system caps the LECs' access rates, and the caps are then adjusted each year by a measure of inflation minus a productivity offset, or "X-factor."

The X-factor represents the amount by which price cap LECs can be expected to outperform economy-wide productivity gains.⁴ In the *LEC Price Cap Order* it consisted of two

² Second Report and Order, *Policy and Rules Concerning Rates for Dominant Carriers*, 5 FCC Rcd. 6786 (1990) ("*LEC Price Cap Order*").

³ First Report and Order, *Price Cap Performance Review for Local Exchange Carriers*, 10 FCC Rcd. 8961, ¶ 92 (1995) ("*1995 Price Cap Review Order*").

⁴ *LEC Price Cap Order*, ¶ 75.

parts. The first is a “historical” component based on the LECs’ *prior* productivity growth. The second component is an additional 0.5 percent consumer productivity dividend (“CPD”). This component of the X-factor reflects an expectation that, because of efficiencies created by the price cap regulatory scheme, LEC productivity would grow faster in the future than it had in the past.⁵

The Commission’s original price cap system also contained a “sharing” mechanism. If a LECs’ interstate rate of return exceeded a certain threshold, the sharing mechanism required the LEC to make a one-time reduction in its rates the following year as a way of “sharing” with consumers the benefits of those unanticipated productivity gains.⁶ The LECs consistently opposed the sharing mechanism and argued that it would severely dampen the price cap system’s incentives to enhance efficiency. Indeed, the LECs argued that sharing prevented them from realizing most of the efficiency gains promised by price cap regulation, and they submitted an economic study (by Strategic Policy Research or SPR) quantifying those effects.⁷

In 1997, the Commission revised the price cap plan by eliminating sharing requirements, prescribing a new historical component of the X-factor of 6.0 percent, and retaining the existing CPD of 0.5 percent.⁸ Several entities, principally price cap LECs, filed petitions with the D.C. Circuit for review of the Commission’s *1997 Price Cap Review Order*.

⁵ *Id.* ¶ 47.

⁶ *Id.* ¶¶ 7, 120-29.

⁷ *See Further Notice*, ¶ 44 n.57.

⁸ Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, *Price Cap Performance Review for Local Exchange Carriers*, 12 FCC Rcd 16642 (1997) (“*1997 Price Cap Review Order*”).

In its decision addressing these petitions, the D.C. Circuit, while generally rejecting the LECs' challenges, held that "the Commission ha[d] failed to state a coherent theory supporting its choice of [a] 6.0% [historical component of the X-factor]." *USTA v. FCC*, 188 F.3d at 526. Specifically, the Court found that the Commission had not adequately explained (i) its decision to accord less weight to certain data, *id.* at 525-26; (ii) its reliance on an upward trend in the X-factor since 1993, *id.* at 526; and (iii) its decision to give independent weight to the results of AT&T's X-factor analysis, *id.* at 526.

The Court also found that the Commission had not provided a sufficient explanation for its decision to retain the 0.5 percent CPD. *Id.* at 527. The Court expressly acknowledged (and petitioners did not dispute) "that it is defensible to include a CPD corresponding to whatever productivity increase may be expected from the elimination of sharing." *Id.* However, the Court found that retention of the prior CPD of 0.5 percent required the Commission to gauge the likely effects on productivity of eliminating sharing, and not just to assume that the magnitude of the changes would be the same as before. *Id.* Accordingly, the Court remanded the case to the FCC "for further explanation." *Id.* at 526.

Although the Commission's *Further Notice* asks for comment on a number of specific questions, those questions deal with three broad issues. First, how should the historical component of the X-factor be determined, both for the period covered by the remand (1997-2000), and for the future?⁹ Second, at what level should the consumer productivity dividend be set, both for the remand period and in the future?¹⁰ And third, how should the Commission

⁹ See *Further Notice* ¶¶ 20-42, 46-52.

¹⁰ *Further Notice* ¶¶ 43-45.

“correct for prior years when the X-factor may have been set too low.”¹¹ Each of these issues is addressed in turn below. To summarize, AT&T proposes an historical X-factor of 10.1 percent for the remand period; an historical X-factor of 9.5 percent for the future; a CPD of 1.1 percent; and full reinitialization of the LECs’ price cap indexes.

ARGUMENT

I. THE COMMISSION SHOULD ESTABLISH THE HISTORICAL COMPONENT OF THE X-FACTOR AT A LEVEL OF AT LEAST 9.5 PERCENT FOR 2000 FORWARD, AND 10.1 PERCENT FOR THE 1997-2000 REMAND PERIOD.

As to the first issue, the Commission seeks comment on three alternative methods -- which it calls Options 1, 2, and 3 -- for estimating the historical component for the X-factor. *Further Notice*, ¶ 20. As explained below, the Commission should adopt the Option 2 methodology, and modify it to calculate productivity on an interstate basis rather than a total company basis. The Commission should then separately calculate the X-factor applicable to the remand period -- *i.e.*, 1997-2000 -- and the X-factor to be applied beginning July 1, 2000 going forward. As AT&T shows below and in the attached Appendix A, the X-factor for the remand period should be 10.1 percent, and for the period 2000 going forward it should be 9.6 percent.

A. With Appropriate Modifications, The Staff’s Updated TFP Study (Option 2) Provides A Reasonable Methodology For Estimating An Interstate-Only X-factor, Which Can And Should Be Used Instead Of A Total Company X-factor.

Of the three alternative methods for estimating the historical component of the X-factor, two of them -- Options 1 and 2 -- use the TFP methodology that has previously been approved, in principle, by the D.C. Circuit. Of those two options, the Option 2 methodology (with one minor technical correction) is superior to Option 1 for calculating the historical productivity measure on a total company basis. *Further Notice* ¶¶ 21, 28-32. Option 2 is the best option because it takes

¹¹ *Further Notice* ¶¶ 45-46.

the Commission's 1997 methodology (*i.e.*, Option 1) and corrects that methodology's erroneous calculation of capital inputs.¹² It can also be easily modified to permit the calculation of a reasonable interstate-only X-factor. Option 3, by contrast, is useful primarily as a means of confirming the results obtained under the modified Option 2 methodology.

1. With A Minor Technical Correction, The Staff's Updated TFP Study Provides A Reasonable Estimate Of The LECs' Total Company X-factor, And Is Superior To The 1997 TFP Study For That Purpose.

The Commission should select the Option 2 method as superior to the Option 1 method. As Appendix B of the *Further Notice* acknowledges, and as AT&T has previously advocated, the Commission's 1997 methodology (Option 1) "made a conceptual error in using actual imputed cost of capital when measuring the productivity of regulated companies." *Further Notice* App. B at 45. The 1997 FCC staff study "subtract[ed] the cost of the labor and material inputs from revenues, and the residual revenue [was] *assumed* to be the cost of the capital input" (which is known as the residual value method). *Further Notice* ¶ 29 (emphasis added). In other words, the 1997 study "assumed that all of this residual was the required return to capital, *i.e.*, that no excess profit was earned." *Further Notice* App. B at 46. While that might be a "reasonable assumption for a competitive market," the staff properly recognizes that such an assumption is not warranted in the context of calculating the productivity gains of the price cap LECs. *Further Notice* App. B at 46 ("In a regulatory setting, however, the productivity gains are 'revealed' by the X-factor, not by market forces").

Moreover, this error in the Option 1 methodology is self-perpetuating. As the FCC staff acknowledges, "[b]y attributing all of the residual to the capital inputs, the residual value method

¹² The Option 2 methodology also makes other necessary corrections to the Option 1 method, especially the use of dial equipment minutes in calculating the local service output index. See *Further Notice*, ¶ 31.

tends automatically to define whatever profits or losses the LECs realized during the historical period as increases or decreases in the cost of capital inputs.” *Further Notice* App. B at 46. Thus, if the X-factor were too low, the LECs would earn excess profits. Yet, under the residual value method “the Commission would conclude that the historical cost of LEC capital rose more rapidly during this period than it actually did.” *Id.* The Commission would then use that erroneous conclusion as the basis for the X-factor for the subsequent period and “thus calculate an X-factor that was still too low.” *Id.* As the FCC staff aptly notes, the result would be that the “LECs’ profits would continue to increase despite no increase in LEC productivity.” *Id.*

The Option 2 methodology removes this inherent bias. It is based on a direct calculation of the LEC cost of capital that would prevail in a competitive market. *Further Notice* App. B at 46 (“In order to correct the miscalculation of the LECs’ cost of capital in the 1997 Staff TFP study, it is necessary to replace the TFP study’s cost of capital with a competitive cost for the inputs during the historical years”). For these reasons, the Option 2 methodology is far superior to the Commission’s 1997 methodology (Option 1) for calculating the LECs’ historical total company productivity gains.

AT&T has identified a minor technical error in the staff’s calculations, and the corrections, and the explanation of those corrections, are provided in Appendix A. However, these corrections do not materially alter the staff’s conclusion that, properly computed, the actual observed X-factors, calculated on a total company basis, have averaged approximately 5.8 percent for the period 1986-95 and 6.0 percent for the period 1986-98.¹³

¹³ *Further Notice*, App. B at 65-66.

2. The Staff's Updated TFP Study Can Easily Be Modified To Provide A Reasonable Interstate-Only X-factor.

Another virtue of the Option 2 methodology is that it can easily be modified to permit the Commission to base the X-factor on estimates of productivity gains in *interstate* services, rather than total company productivity. *See USTA*, 188 F.3d at 529. As a matter of both law and policy, the X-factor should be based, if possible, on estimates of productivity gains for interstate services. *Further Notice* ¶ 37 (“interstate data [is] conceptually more appropriate for representing the services regulated by the Commission under price caps”). Indeed, courts have long recognized that the Communications Act requires the Commission to regulate the rates for interstate services on the basis of *interstate* costs. *Smith v. Illinois Bell Tel.*, 282 U.S. 133, 148, 150-51 (1930); *Crockett Telephone Co. v. FCC*, 963 F.2d 1564, 1572-73 (D.C. Cir. 1992).

The D.C. Circuit did not hold otherwise in the *USTA* case. *See USTA*, 188 F.3d at 528-29. Rather, the Court merely upheld the Commission’s determination that the record before it did not allow it to quantify the difference between interstate and total company productivity growth. The Court upheld the use of total company data solely on that basis. *Id.*

In the view of both the Commission and the D.C. Circuit, the difficulty in calculating interstate productivity growth centers on the calculation of interstate inputs. *USTA*, 188 F.3d at 528; *1997 Price Cap Order*, ¶ 107-10. As the Court noted, intrastate and interstate services are generally provided over common facilities, and in the past there have been disputes about how best to segregate the interstate inputs from the intrastate inputs. *USTA*, 188 F.3d at 528. Although these analytical difficulties are by no means insoluble,¹⁴ in 1997 the Commission found the record inadequate to make such determinations in the context of the X-factor, and the

¹⁴ *See, e.g., Smith*, 282 U.S. at 150-51 (although apportioning costs between the jurisdictions is difficult, “extreme nicety is not required”).

Court accepted that finding. As the Court acknowledged, however, the Commission had expressly “declared itself ready to consider some adjustment if it were shown that inclusion of intrastate data systematically biased the X-factor estimate downward.” *USTA*, 188 F.3d at 528 (citing *1997 Price Cap Order* ¶ 109).

As AT&T shows in Attachment A, this supposed “analytical difficulty” in calculating interstate inputs does not in fact pose any bar to calculating the X-factor for interstate services under the Commission’s TFP methodology. The Commission’s formula for calculating the X-factor properly includes both a TFP measure and an input price differential. However, it can be shown mathematically that the input price and quantity terms of the Commission’s X-factor formula largely *cancel each other out*. See Appendix A, pp. 2-5; see also *Further Notice* App. B at 27 (“most measurement errors associated with the prices of the inputs will tend to cancel out so that the impact on the productivity offset will, in general, be minimal”). This mathematical fact suggests that the X-factor can be calculated by a simpler, more direct method. Under that method, the X-factor is almost entirely a function of changes in LEC revenues and LEC outputs, as well as the economy-wide measures of productivity growth and input price changes, and can be calculated without measuring the input price and quantity components of the X-factor. Although the Commission’s TFP analysis is useful for identifying major components of the X-factor, the X-factor can be calculated directly without separately identifying each of those components.

For present purposes, then, the important point is that this more direct measure permits the Commission to calculate the interstate-only X-factor without the analytical difficulties created by the question of how to segregate out interstate inputs. Thus, the principal objection to calculating the X-factor on the basis of interstate data essentially dissolves away. Because

changes in the LECs interstate revenues and interstate outputs are easily determined, the X-factor for interstate services can be calculated just as easily.

AT&T has provided the calculations in Appendix A. As shown in that appendix, X-factors calculated under this modified Option 2 methodology average approximately 10.1 percent over the period from 1986-1995, and approximately 9.6 percent over the period 1986-1998.¹⁵

Moreover, there can be no doubt that, to use the Court's words, the "inclusion of intrastate data systematically biase[s] the X-factor estimate downward." 188 F.3d at 528. As the staff states, "[t]here is every reason to expect that productivity enhancements experienced historically in the interstate access market would be substantially greater than the overall rate of productivity growth experienced by LECs in supplying all services." *Further Notice* App. B at 26. Indeed, as the staff explains, most of the productivity gains experienced in the telecommunications industry relate to reductions in the costs of switching and transmission, which would have a disproportionate impact on the productivity of interstate services. *Id.* As a result, the staff correctly concludes that the Commission's TFP methodology "*is biased downward.*" *Id.* (emphasis added).

¹⁵ As Appendix A also shows, these estimates are conservative. The estimated X-factors for recent years become even higher when the Option 2 methodology is also modified to reflect an alternative measure of inflation. That modification uses GDPPI as an inflation factor, rather than the difference between the U.S. nonfarm business sector TFP growth rate, and the U.S. nonfarm business sector input price growth rate. With this modification, the X-factors average approximately 10.1 percent over the 1986-1995 period, and 10.0 percent over the 1986-1998 period.

Similar results are obtained when this methodology is modified to use an alternative capital cost index that is somewhat more consistent with the direct estimation methodology. As shown in Appendix A, this approach removes excess earnings from interstate revenues for 1991 through 1998, based on information concerning the LECs' cost of capital.

This downward bias is enormous. As AT&T's calculations show, the historical interstate X-factor has been substantially higher than the X-factor based on total company data – an average of about 4.5 percentage points higher over the 1986-1995 period, and 3.7 percentage points higher over the 1986-98 period. This bias translates into billions of dollars annually in excessive access charges.

Now that the “systematic[] [downward] bias[]” of the total company X-factor has been unequivocally established, there is no valid basis for continued reliance on total company data. *See, e.g., USTA*, 188 F.3d at 528-29 (reversal would have been warranted if any party had made compelling showing that total company data created a systematic downward bias in the X-factor). The Commission should therefore modify its X-factor computations accordingly.¹⁶

3. The Staff's Imputed Productivity Study Is Useful As A Means Of Confirming The Accuracy Of The TFP Studies.

The Commission also seeks comment on a different approach to calculating the X-factor (Option 3), which is designed to calculate the X-factor that “yields the aggregate revenues that would have been generated in a competitive market.” *Further Notice* ¶ 35. This “imputed X” approach is valuable as a means of supporting the Commission's results under the TFP methodology.

¹⁶ The Commission also seeks comment on whether the proposed addition of a “q” factor to the price cap formula would necessitate changes in the X-factor, and whether changes to the X-factor might obviate the need for a “q” factor. *See Further Notice*, ¶ 49. If the Commission adopts a X-factor based on interstate data that adequately reflects the growth in interstate access minutes, as explained above, then a “q” factor would be unnecessary. If the Commission continues to determine the X-factor based on total company data, however, a “q” factor would be necessary, and certain adjustments to the X-factor may be warranted. For a fuller discussion, *see Access Charge Reform*, CC Docket Nos. 96-262 et al., AT&T Reply Comments on LEC Pricing Flexibility FNPRM, pp. 13-19 (filed November 29, 1999).

Indeed, as the Commission notes, the imputed X approach is very similar to the approach that AT&T proposed in 1995 in the original LEC Price Cap Performance Review proceeding. *Further Notice*, ¶ 38. AT&T continues to believe that the imputed X approach has substantial merit. As the Commission notes, the objections in 1995 to AT&T's "Historical Revenue Approach" went to the data that AT&T used, and not to the imputed X approach itself. *Further Notice* ¶ 39. Moreover, the imputed X approach has many advantages. It is inherently a measure of productivity gains in interstate services, rather than total company services. And, although it is not easier to administer than the "direct" TFP approach outlined above, it is somewhat easier to administer than the traditional TFP approach. *Further Notice* ¶ 35.

Despite the strengths of the Option 3 approach, AT&T does not believe the Commission should adopt an entirely new methodology for calculating X-factors in this proceeding. Instead, the best use for the imputed X approach at this time is as further support for the results derived from the Option 2 TFP approach, modified to reflect interstate rather than total company data. AT&T has made some corrections to the calculations contained in Appendix C of the *Further Notice*; those calculations, with an explanation of the corrections, are set forth in Appendix B. Those results are similar to the results under the TFP methodology (corrected to estimate interstate productivity only), and confirm that the X-factor has been grossly understated in previous years.

B. Based On The Modified Option 2 Methodology, The Commission Should Set The Historical Component Of The X-factor For The Remand Period (1997-2000) at 10.1 Percent.

Having established that the Commission should use the modified Option 2 methodology described above to calculate the LECs' historical productivity growth during the 1986-98 period, the next question is how to derive from these calculations X-factors to be used during the remand period (1997-2000) and prospectively. The D.C. Circuit's criticisms of the *1997 Price Cap*

Order were directed principally to this stage of the analysis. As shown below, however, the court's objections can easily be met by using the same "rolling average" methodology used by the Commission in that order, but without giving preference to any particular averages.

In 1997, the Commission determined the historical component of the X-factor in the following manner. First, the Commission used the Option 1 TFP methodology to calculate productivity growth for each year from 1986 through 1995. The Commission then constructed six "rolling averages" of these results, covering the periods 1986-95, 1987-95, 1988-95, 1989-95, 1990-95, and 1991-95. The Commission used rolling averages because of its desire to place somewhat greater weight on more recent years, which would likely be more representative of the LECs' current and potential productivity potential. The D.C. Circuit did not question either this general methodology or the Commission's rationale for it. *See USTA*, 188 F.3d at 524-26.

The final step in the Commission's analysis, however, was its decision to select the historical component of the X-factor from the high end of the range of rolling averages, rather than simply taking the mean or the median. The Commission gave three reasons for doing so, all of which were rejected by the D.C. Circuit. First, the Commission noted that four of the six averages were clustered at the top end of the range around 6.0 percent, and it decided to give less weight to the two lowest averages. The Court, however, found that the Commission had not given any statistically valid reason for discounting those two averages. *USTA*, 188 F.3d at 525-26. Second, the Commission found that there had been an upward trend in the X-factor in recent years. The Court, however, held that the Commission had not adequately explained either the trend itself, or why it could be expected to continue. *Id.* at 526. Third, the FCC gave "some weight" to AT&T's X-factor estimates as a confirmation of the Commission's choice. But the Court, mistakenly thinking that the Commission had rejected AT&T's study altogether, found that such a use of the AT&T estimate "appear[ed] irrational." *Id.* at 526.

To respond to the Court's remand, the Commission should therefore re-estimate the X-factor for the remand period as follows:

(1) Recalculate the X-factor for each year from 1986 through 1995 using the modified TFP methodology embodied in Option 2, further modified as explained above to estimate productivity growth in interstate services only;

(2) Calculate new rolling averages for the same sets of years that the Commission relied on in the *1997 Price Cap Order* (i.e., the average X-factor for the periods 1986-1995, 1987-1995, 1988-1995, 1989-1995, 1990-1995, and 1991-1995);

(3) Calculate the median of those six numbers. Basing the historical component of the X-factor on the median of the averages obviates the concerns expressed by the D.C. Circuit in *USTA*, 188 F.3d at 525-26. Indeed, the LEC petitioners argued to the Court that the Commission should have taken the median of the averages. *USTA v. FCC*, Nos. 97-1469 et al., Reply Brief for Local Exchange Carrier Petitioners, p. 8 ("if one truly fears that outliers may skew the results, the standard statistical solution is to calculate the median of the data set").

AT&T has set forth these calculations in detail in Appendix A. The six rolling averages, and the mean and median of the set, are as follows:

1986-95	10.057
1987-95	9.886
1988-95	9.835
1989-95	10.156
1990-95	10.826
1991-95	10.103
Mean:	10.144
Median:	10.080

When the mean and the median are rounded to the nearest tenth of a percent, they both become 10.1 percent. Therefore, the Commission should set the historical component of the X-factor for the remand period at 10.1 percent.

C. The Commission Should Set The Historical Component OF The X-factor For 2000 Forward At 9.5 Percent.

The Commission also seeks comment on whether it “should prescribe an X-factor that would apply as of July 1, 2000 that is different from the retrospective X-factor applicable to the period affected by the court’s remand.” *Further Notice* ¶ 46. Because the Commission now has data for the years 1996-98, it should use those data to estimate a new historical component of the X-factor that would apply on a going-forward basis.

Accordingly, to calculate that X-factor for the post-2000 period, the Commission should use the modified Option 2 methodology described above, but it should add the 1996-98 data to each of the rolling averages. This is appropriate because it continues to give greater weight to data from the more recent years governed by price caps. *See Further Notice* ¶ 33 (seeking comment on whether the Commission should continue to give more weight to more recent years). AT&T sets forth these calculations in Appendix A. The six rolling averages, and the median and mean of the set, are as follows:

1986-98	9.649
1987-98	9.488
1988-98	9.413
1989-98	9.596
1990-98	9.981
1991-98	9.423
Mean:	9.592

Median: 9.542

Rounding the mean to the nearest tenth of a percent yields 9.6 percent, but rounding the median to the nearest tenth of a percent yields 9.5 percent. Accordingly, taking the lower of these two amounts (and consistent with the LECs' arguments to the Court), the Commission should prescribe a new historical component of the X-factor of 9.5 percent, applicable from July 1, 2000 forward.

D. The Commission Has Ample Discretion To Use This Methodology To Establish The X-factor Governing Both The Remand Period And Future Periods.

In the *Further Notice*, the Commission also seeks comment on whether it "should use only the results from the 1997 staff TFP study in setting the historical component of the X-factor for the remand period," and whether the Commission is "precluded from revising the X-factor using any other methodology, or from supplementing the data in the 1997 staff TFP study." *Further Notice*, ¶ 24.¹⁷ The short answer is that the Commission has ample authority to consider new data and to develop new methodologies when prescribing an X-factor for the remand period, as well as for the future.

This is clearly established by, among others, the D.C. Circuit's decision in *Eastern Carolinas Broadcasting Co. v. FCC*, 762 F.2d 95, 98-104 (D.C. Cir. 1985) ("*Eastern Carolinas*"). There, the court expressly recognized the Commission's long-standing policy of allowing parties to submit updated data concerning remanded issues, and to make new

¹⁷ See also *Further Notice*, ¶ 34 (seeking comment on "whether additional years of data should be considered in the remand, or whether the X-factor [the Commission] select[s] should rely on the same years of data as used in the 1997 *Price Cap Review Order*," and whether it would be "more responsive to the court's remand to prescribe an X-factor based on data available in 1997 or to consider the additional data that has become available in the interim in setting the X-factor on a going-forward basis.").

determinations based on those data.¹⁸ In that same decision, the court noted the Commission's decision in *United Community Antenna Systems*, 67 F.C.C.2d 1376 (1978), where, on remand from *KIRO, Inc. v. FCC*, 545 F.2d 204 (D.C. Cir. 1976), the Commission expressly requested updated data because it had "determined that it could not adequately explain its earlier decision without soliciting further comments and evidence from the parties." *Eastern Carolinas*, 762 F.2d at 99-100. In that case, the Commission held that "[I]t is essential in this case -- involving as it does a shifting of burdens between broadcasters and cable operators -- that the data forming the basis of our decision be *current and complete*. Since some of the data in the record are more than four years old, any ruling . . . should be made only after *updated data* are obtained." *United Community*, 67 F.C.C.2d at 1382 (emphasis added).¹⁹

This proceeding presents a similar situation in which updated data are not only permitted, but required. As in *United Cable*, this case involves a "shifting of burdens" between two major

¹⁸ 762 F.2d at 99 (citing *WSTE-TV, Inc.*, 75 F.C.C.2d 52, 53 n. 1 (1979) ("We shall grant all three unopposed requests to accept additional pleadings [after remand]. Good cause exists for acceptance of the pleadings inasmuch as they focus on the Commission's most recent views concerning the use of translator stations, a subject central to this proceeding upon remand."); *Lebanon Valley Radio, Inc.*, 50 F.C.C.2d 383, 384 (1974) ("We believe that the Court's opinion raises significant questions which have not heretofore been adequately addressed. Our deliberation on these questions will be enhanced by limited further participation of the parties."); *WAIT Radio*, 22 F.C.C.2d 934, 934 (1970) ("The court . . . directed the Commission to give the merits of the proposal a hard look and ' . . . state its basis for decision with greater care and clarity than was manifested on its disposition of WAIT's claims.' In line with that decision, this Commission invited any new evidence the parties might wish to submit."), *aff'd*, 459 F.2d 1203 (D.C. Cir.), *cert. denied*, 409 U.S. 1027, 93 S.Ct. 461, 34 L.Ed.2d 321 (1972); *American Television Relay, Inc.*, 95 F.C.C.2d 1089, 1089-90 (1983); *KDAB, Inc.*, 91 F.C.C.2d 277, 278- 79 (1982); *Charles Jobbins*, 68 F.C.C.2d 46 (1978); *Gale Broadcasting, Inc.*, 19 F.C.C.2d 622, 623 (1969)).

¹⁹ The Court in *Eastern Carolinas* further recognized that although the "Commission has [occasionally] declined to consider additional arguments after remand, it has clearly done so [only] as an exercise of agency discretion after determining that the existing record enabled it to dispose of the remanded issue." *Eastern Carolinas*, 762 F.2d at 100.

Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, 7 FCC RCd. 266, ¶ 28 & n.68 (1992) (“*Spectrum Order*”) (citing *Eastern Carolinas*, 762 F.2d at 101 & n.8). Indeed, in light of the Commission’s recognition that “the 1997 staff TFP study methodology may fail to calculate an X-factor that is consistent with the objectives of [the Commission’s] price cap plan” (*Further Notice* ¶ 28), failure to consider new evidence or methodologies could itself provide a basis for reversal. See, e.g., *Eastern Carolinas*, 762 F.2d at 103-04 (the Commission’s refusal to consider relevant new data would have provided a “compelling” basis for reversal if the Commission had not had a separate, independent basis for rejecting the petitioner’s claim).

Nor does the D.C. Circuit’s remand decision preclude the Commission from considering new data or developing new methodologies to prescribe an X-factor for the remand period. The Court merely remanded the case to the FCC “for further explanation.” *USTA*, 188 F.3d at 526. As the Commission has previously recognized, this “language enables the Commission to examine in this rulemaking proceeding any public interest considerations that are relevant to the specific issues remanded by the court.” *Spectrum Order*, ¶ 28; see also *Eastern Carolinas*, 762 F.2d at 97, 101 n.8 (the Court’s remand order “for an explanation” of the Commission’s decision “simply cannot be read to foreclose the possibility of post-remand submissions”). In this case, that principle would obviously include a consideration of the relevance of updated data and the superiority of alternative methods of establishing the X-factor. Indeed, it would be entirely perverse and “contrary to the [Commission’s] obligations under the Communications Act” for the Commission to read the Court’s remand order as requiring blind adherence to outdated data and a flawed X-factor methodology. *Spectrum Order*, ¶ 29; see also *id.* ¶ 29 n.69 (an “inflexible

interpretation of Section 402(h) . . . could easily lead to absurd results which would deserve the public interest”).

II. THE COMMISSION SHOULD ADOPT A CONSUMER PRODUCTIVITY DIVIDEND OF AT LEAST 1.1 PERCENT.

The Commission should also adopt a CPD of 1.1 percent. As the Commission is aware, the D.C. Circuit remanded the Commission’s decision to retain the CPD solely on the ground that the Commission failed to explain its “choice of the amount -- 0.5%.” *USTA*, 188 F.3d at 527. As the Court observed, the LEC petitioners did not dispute the FCC’s underlying rationale, namely, that retention of the CPD in some amount was appropriate because the FCC’s newly adopted rule eliminating all sharing requirements would increase the price cap LECs’ productivity in the future. *Id.* Because there is no dispute about the Commission’s *reason* for retaining the CPD, the only legitimate question on remand is the level at which the CPD should be set to reflect the impact of this change on the LECs’ productivity.

To set the CPD at that level, the Commission must determine a reasonable estimate of the difference between the LECs’ potential productivity gains in a sharing regime and the LECs’ potential productivity gains in a non-sharing regime. As explained more fully in Appendix C, there are several possible approaches to calculating this difference, and all of them point toward a CPD of at least 1.1 percent.

One means of calculating the CPD can be derived from the multiple studies in the record that establish that the elimination of the sharing mechanism is likely to have dramatic effects on LEC productivity. The Commission specifically cites two such studies in the record -- one performed by Strategic Policy Research (“SPR”) on behalf of Southwestern Bell, and the other sponsored by the Ad Hoc Telecommunications Users Committee (“Ad Hoc”). *Further Notice* ¶ 44. These studies show that the imposition of sharing suppresses the LECs’ efficiency incentives

and, conversely, that the complete elimination of sharing would substantially increase the LECs' productivity.

To be sure, neither study attempts to measure directly the impact on productivity of the elimination of sharing. However, a rough estimate of that impact can be derived from the SPR study, combined with other data on the effect of the change from rate-of-return to price-cap regulation.

Specifically, the SPR study shows that the change from a price cap system with sharing to one without sharing should ultimately produce a much larger productivity increase -- about three times as much -- as the change from the rate-of-return system to price caps with sharing. See Appendix C (giving detailed explanation). The next task, then, is to estimate the productivity impact of the change from rate-of-return regulation to the 1990 price-cap system.

The most obvious estimate of this quantity is the Commission's original estimate of a 0.5 percent CPD when it established the price cap system. The Commission set the CPD at that level because it believed that the change from a rate-of-return system to the new price-cap system (even with sharing) would increase the LECs' productivity by at least that amount.²² Inasmuch as no party has challenged the Commission's original conclusion that moving from rate of return regulation to price caps (with sharing) would increase LEC productivity by at least 0.5 percent a year, the Commission can rely on that figure to establish a new CPD here.²³ The SPR model

²² *LEC Price Cap Order*, ¶¶ 74-102.

²³ *National Rural Telecom Ass'n. v. FCC*, 988 F.2d 174 (D.C. Cir. 1993) (upholding original order establishing price caps for interstate access services).

predicts that the change from the sharing system to a no-sharing system should produce productivity gains of about three times that amount -- *i.e.*, 1.5 percent.²⁴

Other sources suggest that an even higher CPD is appropriate. For example, in the Commission staff's TFP study (the Option 2 study) the average X-factor on a total company basis for 1986-1990 (prior to price caps) is approximately 5.5 percent, whereas the average X-factor for 1991-95 (after the 1990 price cap system was implemented) is approximately 6.1 percent -- a difference of 0.6 percent.²⁵ Thus, the SPR study suggests that the ultimate productivity gains from changing from a system with sharing to a system without sharing should be three times that difference -- *i.e.*, 1.8 percent.

This analysis can also be further refined to give a more accurate picture of the impact of the change in regulatory systems by isolating the impact of those changes on LEC productivity, and by using interstate data. As shown in Table A-9 of Appendix A, differential TFP growth (the best measure of LEC productivity growth compared with the economy as a whole) increased from 7.13 percent for the period 1986-1990, to 7.89 percent for the period 1991-95, a difference of 0.66 percent. Applying the SPR model (and rounding up to the nearest tenth of a percent) thus

²⁴ Although the revision of the SPR model suggested by Ad Hoc (and alluded to in the *Further Notice*) does not permit a similar calculation of the effect of eliminating sharing, that revision appears consistent with this conclusion. Indeed, the Ad Hoc study is quite similar to the SPR study, except that it assumes that, even without price regulation, the gains from efficiency enhancements are "transitory" rather than permanent, as in the SPR study. As a result of this assumption, Ad Hoc calculates that a price cap plan with 50/50 sharing would produce 45 percent of the efficiency incentives that full competition would produce, and that a pure price cap plan would produce about 86 percent of those efficiency incentives. See Reply Comments of the Ad Hoc Telecommunications Users Committee, CC Docket No. 94-1 (June 29, 1994) at 16. Although the predicted incentives are higher in absolute terms, the relationship between them is approximately the same as in the SPR study, so the impact of moving from one system to the other should be about the same as well.

²⁵ *Further Notice*, App. B, Table B-12.

suggests that the CPD going forward would be 2.0 percent. The Commission staff's results based on total company data, also shown on Table A-9, exhibit a similar pattern.²⁶

Another alternative is to rely on the LECs' own apparent valuations of the efficiency impact of the sharing mechanism. In the Commission's *1995 Price Cap Review Order* (§ 214), the FCC gave the price cap LECs three alternatives for selecting the X-factor: a minimum X-factor of 4.0 percent with full sharing requirements, a 4.7 percent factor with a less restrictive sharing mechanism, and a 5.3 percent factor with no sharing requirement. These alternatives were available to the LECs for their tariff filings on July 1, 1995. Significantly, the vast majority of the price cap LECs chose the 5.3 percent X-factor with its no-sharing condition: Five of the seven RBOCs elected the highest (5.3 percent) X-factor in return for the elimination of sharing, and most of the non-RBOC price cap LECs also chose the 5.3 percent/no sharing alternative.²⁷ Thus, most of the price cap LECs were willing to pay for the elimination of sharing by increasing their individual X-factor by 130 basis points.

This valuation by the price cap LECs themselves is strong evidence of the *minimum* increase in productivity that could be expected from the elimination of sharing. In other words, the LECs' own actions show that they believed that could achieve additional

²⁶ The staff's imputed X Study (Appendix C of the *Further Notice*) provides further corroborating evidence. That study calculates the X-factors required in each year to maintain the LECs' average rate of return at the level of the previous year (as shown in Table C-4 of that study). These calculations show an average X factor of 7.66 for the years 1996 to 1998 – more than two percentage points higher than the 5.59 average computed for 1992 to 1995.

²⁷ The five RBOCs selecting the 5.3 percent X-factor were Ameritech, Bell Atlantic, BellSouth, PacTel, and Southwestern Bell. See Fourth Further Notice of Proposed Rulemaking, *Price Cap Performance Review of Local Exchange Carriers*, 10 FCC Rcd. 13659, ¶ 8 n.17 (1995). The non-RBOC carriers selecting the 5.3 percent X-factor were United, Rochester, Lincoln, and GTE (38 out of 46 study areas). *Id.*

productivity gains in a no-sharing regime that would *more* than offset an additional 1.3 percent in the X-factor.

The final step in the analysis is to compute a CPD that can appropriately be added to the historical component of the X-factor. That step is arguably complicated by the fact that the historical component already reflects some years in which the LECs had no sharing obligations (either by election or by rule). Thus, the historical component may already reflect some of the efficiency gains associated with the elimination of sharing. As explained in Appendix C, however, any possibility of double counting can be eliminated by calculating the extent to which the historical component already reflects those gains, and then subtracting that amount from the amount by which the elimination of sharing is expected to increase realized X-factors in the future. When this procedure is applied to the most conservative estimate generated by the SPR model (i.e., based on the 0.5 percent CPD originally adopted by the Commission), the 1.5 percent estimate is reduced by an adjustment of 0.4 percent, for a CPD of 1.1 percent.²⁸

III. THE COMMISSION SHOULD REINITIALIZE THE PRICE CAPS TO CORRECT FOR PRIOR YEARS WHEN THE X-FACTOR WAS SET TOO LOW.

Finally, the Commission seeks comment on “whether a CPD should be included to reduce rates and correct for prior years when the X-factor may have been set too low.” *Further Notice* ¶ 45. The answer is a qualified “yes.” As explained above, the CPD itself should be used solely to compensate consumers for additional future productivity gains that are not captured in the historical measure of productivity gains. The CPD has never been used to correct past mistakes, and it should not be used for that purpose now.

²⁸ For the sake of simplicity, the Commission should apply that 1.1 percent CPD to future periods as well as to the remand period, even though a higher CPD would be justified for that period.

The Commission, however, *should* do something that is equivalent, at least in principle, to using the CPD to prevent past underestimations of the X-factor from continuing to affect (indeed, infect) the price cap indices in the future. That is to reinitialize the price caps and set them where they would have been if the historical X-factor had been 10.1 percent during the period 1995-2000, with a CPD of 1.1 percent during the period 1997-2000, after sharing was eliminated. In both of the Commission's previous price cap performance review proceedings, the Commission has reinitialized the caps to prevent earlier errors in the estimation of the X-factor from affecting future periods. In both cases, the Commission's reinitialization was upheld by the D.C. Circuit. *Bell Atlantic Tel. Cos. v. FCC*, 79 F.3d 1195 (D.C. Cir. 1996); *USTA*, 188 F.3d at 529-30.

Moreover, the Commission acknowledges again in the *Further Notice* that errors in the estimation of the X-factor are not self-correcting, but continue to infect the price cap system and "may cause increasingly erroneous prices over time." *Further Notice* ¶ 45. As shown above, that is certainly true here. The Commission should give consumers relief that is as complete as possible given the prohibition on retroactive ratemaking. Accordingly, the Commission should reinitialize the price caps in this proceeding as well.

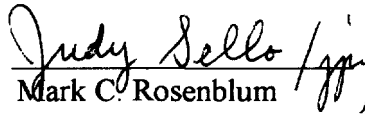
CONCLUSION

For the reasons stated above, the Commission should prescribe historical X-factors of 10.1 and 9.5 percent for the remand and future periods, respectively; a CPD of 1.1 percent; and complete reinitialization.

Respectfully submitted,

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Appendix A
DIRECT CALCULATION OF INTERSTATE-ONLY X-FACTORS
BASED ON OPTION 2 METHODOLOGY

Stephen Friedlander, AT&T

This appendix sets forth a method for calculating the X-factor that is based solely on interstate data and that uses a more direct, simplified version of the Commission staff's total factor productivity (TFP) formula (Option 2). In this simplified, or "direct," method, the X-factor is calculated on the basis of the growth rates for LEC output and LEC revenue, as well as the economy-wide measures of productivity growth and input price changes. The Commission should use this "direct" method to generate interstate-only X-factors.

In the latter half of this appendix, AT&T also suggests a method to simplify the Commission's calculations further by replacing the series on economy-wide input price and TFP growth rates with growth rates for the GDP price index. Then AT&T sets forth an alternative method of adjusting the Commission's TFP formula for excess LEC earnings. This alternative method removes excess earnings from interstate revenues for 1991 through 1998, based on AT&T's estimate of the LECs' cost of capital.

In the final section, AT&T identifies and corrects a minor technical error in the Commission's spreadsheet calculations.

Based on this analysis, X-factors are calculated on the basis of interstate output and revenue, with average X-factors ranging from 9.5% to 11.6% for the periods 1986-1995 and 1986-1998. As explained herein, these X-factors reflect the extent to which changes in the LECs' unit costs have been less than the level of inflation and thereby serve to promote the Commission's objective of ensuring "that ongoing gains by the LECs in reducing unit costs are passed through to consumers."¹

Background

AT&T and other parties have long maintained that the X-factor should be determined on the basis of interstate data. The Commission appears to be in general agreement with this proposition, noting that interstate data is "conceptually more appropriate for representing the services regulated by the Commission under price caps" (*Further Notice* at 37). The Commission staff also observes that "[t]here is every reason to expect that productivity enhancements experienced historically in the interstate access market would be substantially greater than the overall rate of productivity growth experienced by the LECs in supplying all services." *Further Notice*, App. B at 26. Thus, the Commission staff's inescapable conclusion is "that TFP_{LEC} in interstate services has grown faster than company-wide (regulated) TFP_{LEC} " and "the average measure of TFP_{LEC} used in setting X and which should properly reflect productivity growth in the interstate

¹ FCC, *Fourth Further Notice of Proposed Rulemaking in CC Docket No. 94-1*, Sept. 27, 1995, Paragraph 16.